



# Vector-Borne Disease

## Monthly Surveillance Report-December 2015

Center for Acute Disease Epidemiology | Acute Disease Prevention and Emergency Response & EH | [West Nile Virus Website](http://WestNileVirusWebsite)

All data presented in this report are provisional and may change as additional reports are received

Date Issued: January 14, 2016



### West Nile Virus (WNV)

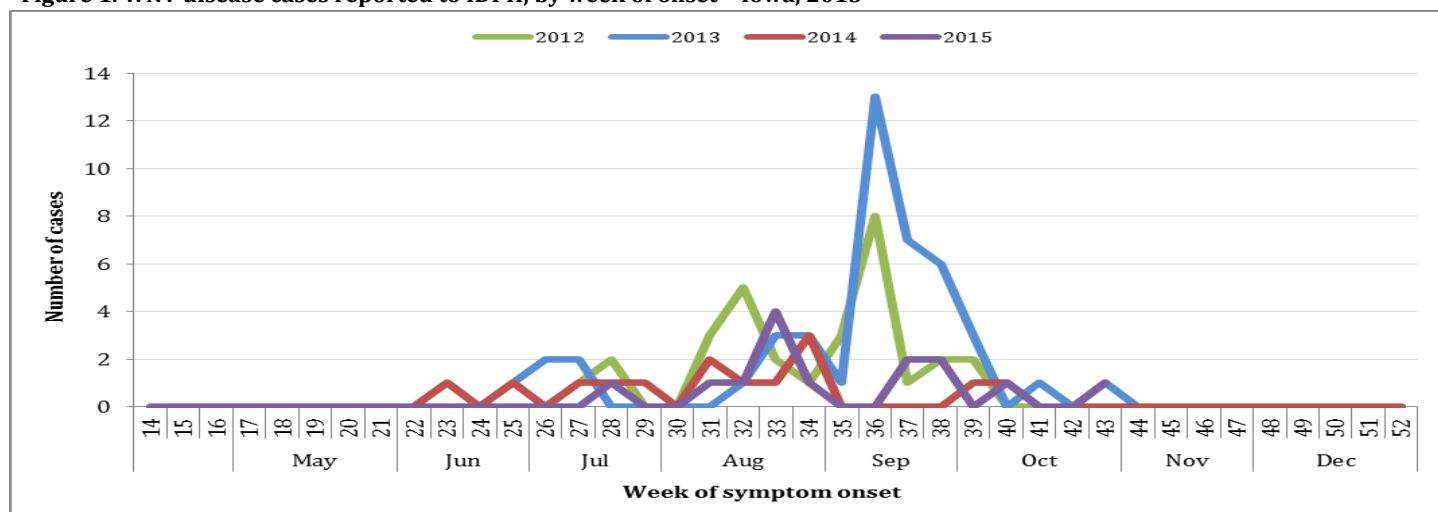
WNV is endemic in Iowa and activity usually peaks in late summer and early fall. IDPH works in collaboration with Local Public Health (LPH) and other appropriate partners to investigate all reported cases.

In addition, IDPH in collaboration with the State Hygienic Laboratory (SHL), Iowa State University (ISU), and local public environmental health partners conducts ecological surveillance in four counties across the state by monitoring mosquitoes and testing for infected populations.

Fourteen human cases of WNV and five presumptive viremic blood donors have been reported in Iowa in 2015 [Table 1]. Seventeen mosquito pools and three horses have also tested positive for this virus. During the 2014 surveillance season, 15 human cases of WNV were reported, in 11 Iowa counties [Figure 1].

County	Human	Blood Donor	Horses	Mosquito Pools		
				<i>Culex pipiens</i>	<i>Culex pipiens</i> Complex	<i>Culex restuans</i>
Adams	1	0	0	N/A	N/A	N/A
Cedar	0	1	0	N/A	N/A	N/A
Clarke	1	0	0	N/A	N/A	N/A
Dallas	1	1	0	N/A	N/A	N/A
Davis	0	0	1	N/A	N/A	N/A
Dubuque	0	1	0	N/A	N/A	N/A
Hancock	1	0	0	N/A	N/A	N/A
Harrison	0	1	0	N/A	N/A	N/A
Jefferson	0	0	1	N/A	N/A	N/A
Lee	1	0	1	N/A	N/A	N/A
Louisa	1	0	0	N/A	N/A	N/A
Lyon	1	0	0	N/A	N/A	N/A
Mahaska	2	0	0	N/A	N/A	N/A
Plymouth	1	0	0	N/A	N/A	N/A
Polk	1	0	0	0	1	2
Ringgold	1	0	0	N/A	N/A	N/A
Story	0	0	0	7	2	5
Tama	1	0	0	N/A	N/A	N/A
Warren	1	0	0	N/A	N/A	N/A
Webster	0	1	0	N/A	N/A	N/A
<b>Total</b>	<b>14</b>	<b>5</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>7</b>

Figure 1. WNV disease cases reported to IDPH, by week of onset – Iowa, 2015



For additional information on Iowa West Nile virus activity, visit <http://idph.iowa.gov/cade/disease-information/west-nile-virus>.

### National WNV Activity:

As of January 12<sup>th</sup>, 1,094 counties from 48 states and the District of Columbia have reported WNV activity to ArboNET for 2015, including 44 states and the District of Columbia with reported WNV human infections (i.e., disease cases or viremic blood donors) and four additional states with reported WNV activity in non-human species only (i.e., veterinary cases, mosquito pools, dead birds, or sentinel animals) [Figure 2].

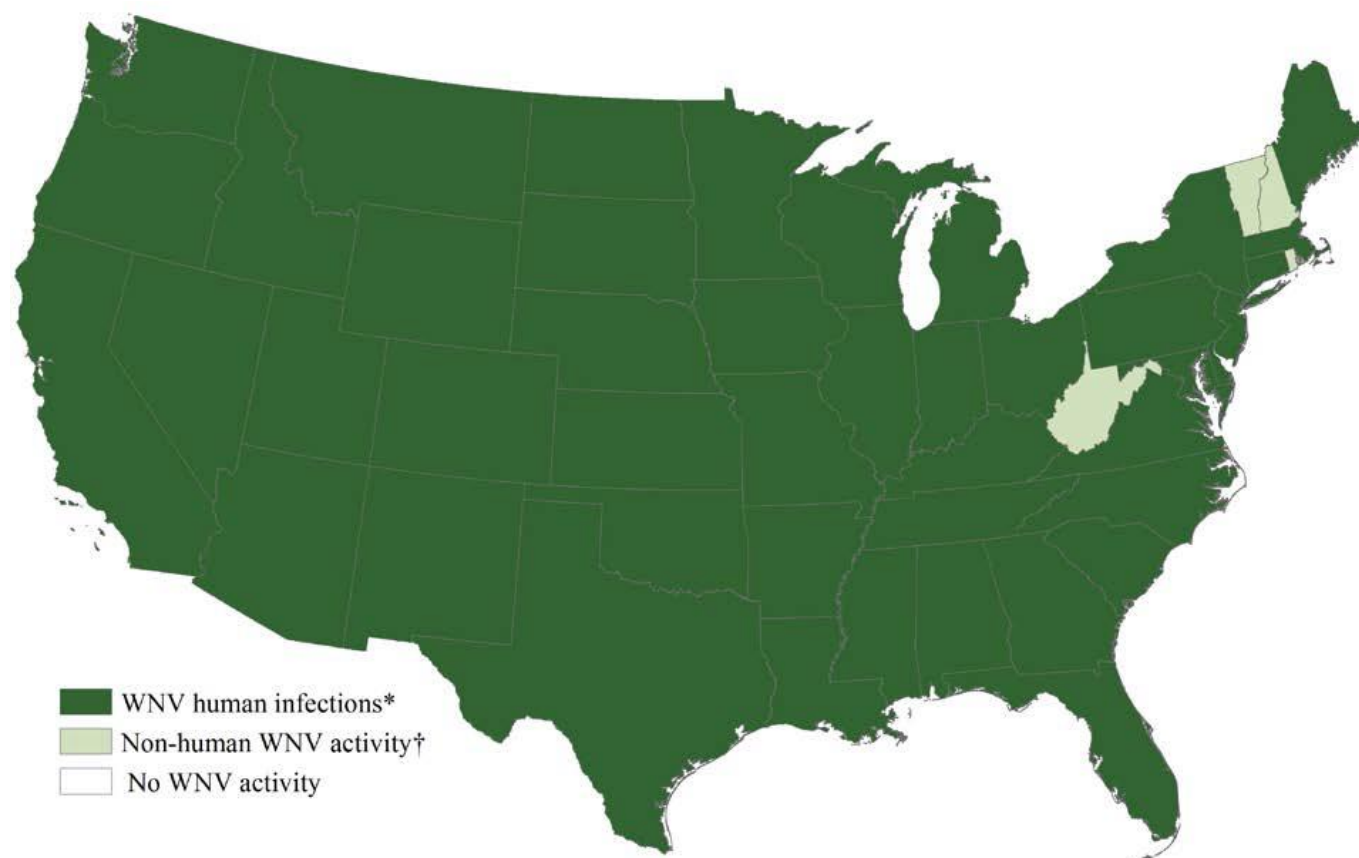
To date, 2,060 human WNV disease cases have been reported from 544 counties in 43 states and the District of Columbia. Of these, 1,360 (66%) were classified as neuroinvasive disease (such as meningitis or encephalitis) and 700 (34%) were classified as non-neuroinvasive disease [Figure 3]. Date of illness onset for cases ranged from March – November [Figure 4].

In addition, 332 presumptive viremic blood donors have been reported from 38 states.

For additional information on the national West Nile virus activity, visit

<http://www.cdc.gov/westnile/statsMaps/preliminaryMapsData/index.html>

**Figure 2. WNV activity reported to ArboNET, by state – United States, 2015 (as of January 12, 2016)**



\*WNV human disease cases or presumptive viremic blood donors. Presumptive viremic blood donors have a positive screening test which has not necessarily been confirmed.

†WNV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

Figure 3. WNV neuroinvasive disease incidence reported to ArboNET, by state – United States, 2015 (as of January 12, 2016)

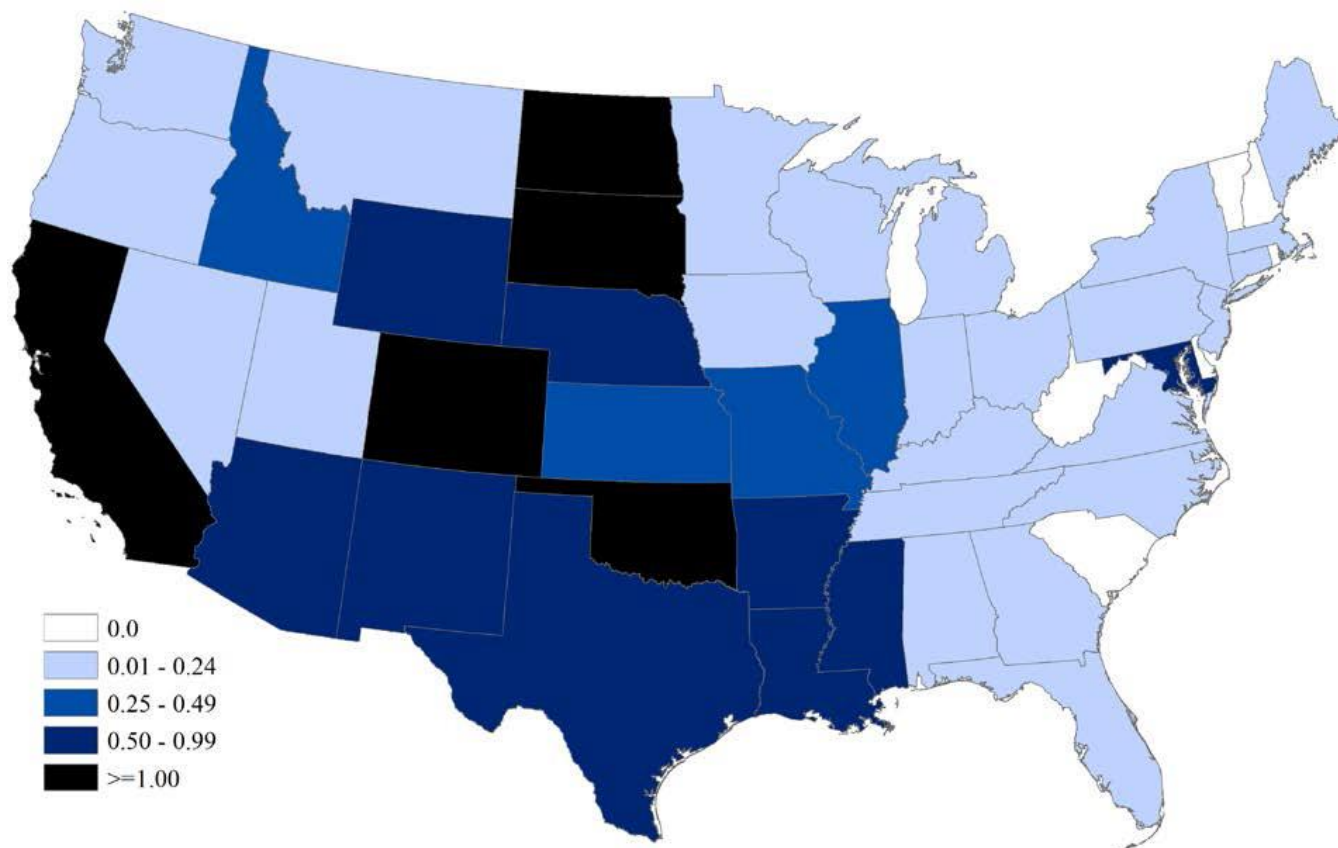
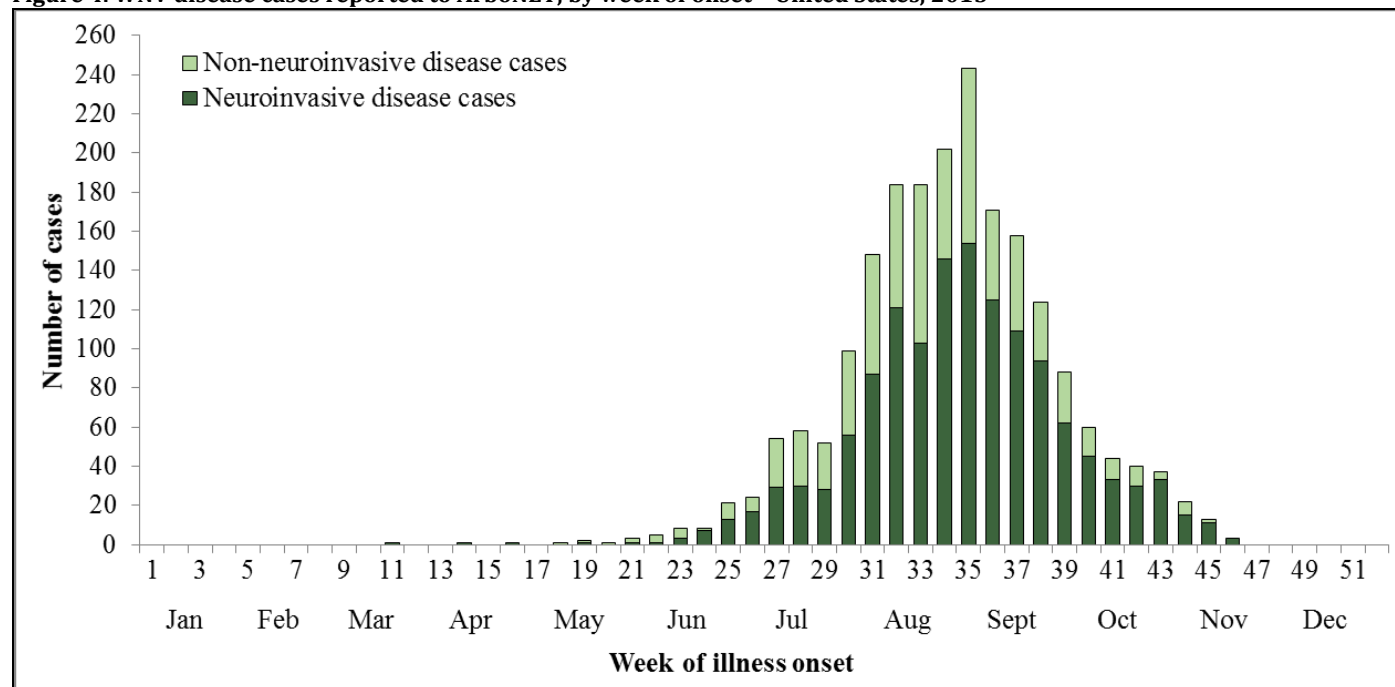


Figure 4. WNV disease cases reported to ArboNET, by week of onset – United States, 2015



## Chikungunya

Chikungunya is a viral disease that is spread to people by the bite of an infected *Aedes aegypti* and *Aedes albopictus* mosquito. Mosquitoes become infected when they feed on a person already infected with this virus. These species of mosquitoes are not sustained in Iowa.

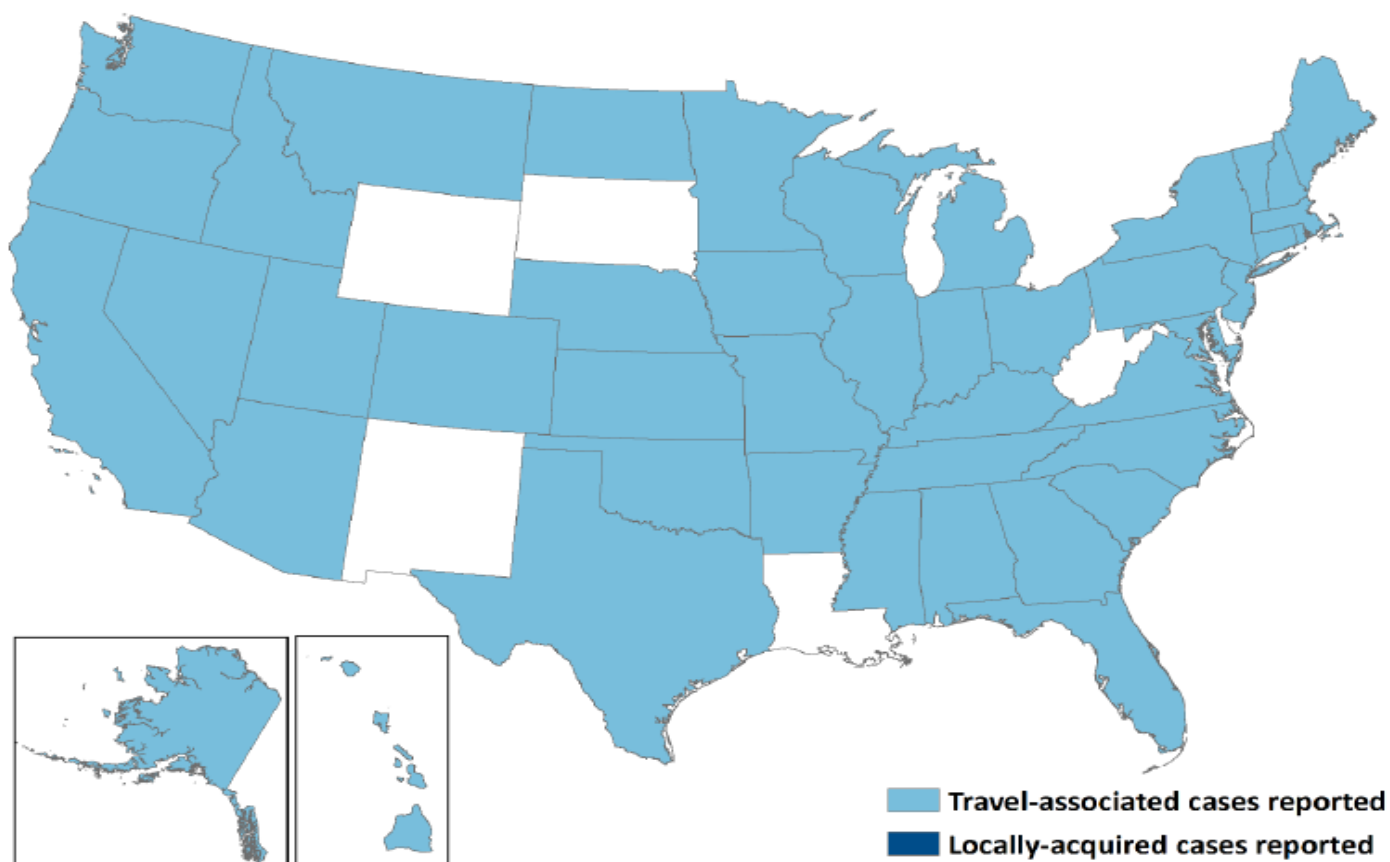
In 2014, four imported cases of chikungunya virus disease were reported in Iowa. Cases occurring in Iowa are in travelers returning from parts of the world where Chikungunya transmission occurs. Two cases of chikungunya have been reported in Iowa, thus far in 2015.

### National Chikungunya Activity:

As of January 12<sup>th</sup>, a total of 679 chikungunya virus disease cases have been reported to ArboNET from 44 U.S. states [Figure 5]. All reported cases occurred in travelers returning from affected areas. No locally-transmitted cases have been reported from U.S. states.

A total of 202 chikungunya virus disease cases have been reported to ArboNET from U.S. territories. All reported cases were locally-transmitted cases reported from Puerto Rico and the US Virgin Islands.

**Figure 5. Chikungunya virus disease cases reported by state – United States, 2015 (as of January 12, 2016)**



## Jamestown Canyon Virus (JCV)

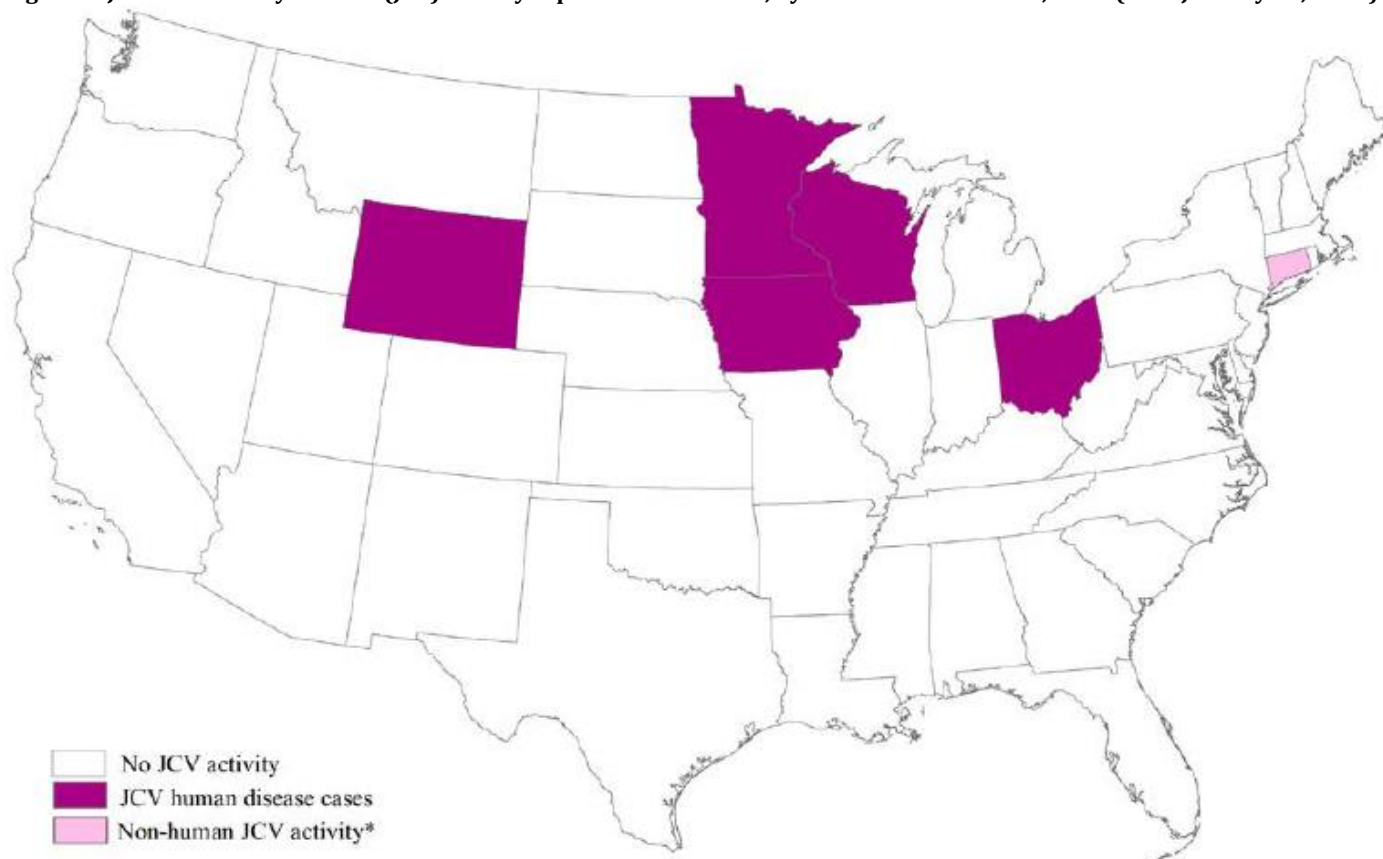
Jamestown Canyon virus is a Bunyavirus within the California serogroup. It is transmitted to humans through the bite of an infected mosquito.

One case has been reported in Iowa. This is the first case of Jamestown Canyon virus identified in Iowa.

### National Jamestown Canyon Virus Activity:

As of January 12<sup>th</sup>, eight counties in five states reported human cases of JCV disease to ArboNET for 2015 [Figure 6]. Seven additional counties in Connecticut have reported JCV activity in non-human species only.

Figure 6. Jamestown Canyon virus (JCV) activity reported to ArboNET, by state — United States, 2015 (as of January 12, 2016)



\*JCV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

## Dengue Fever

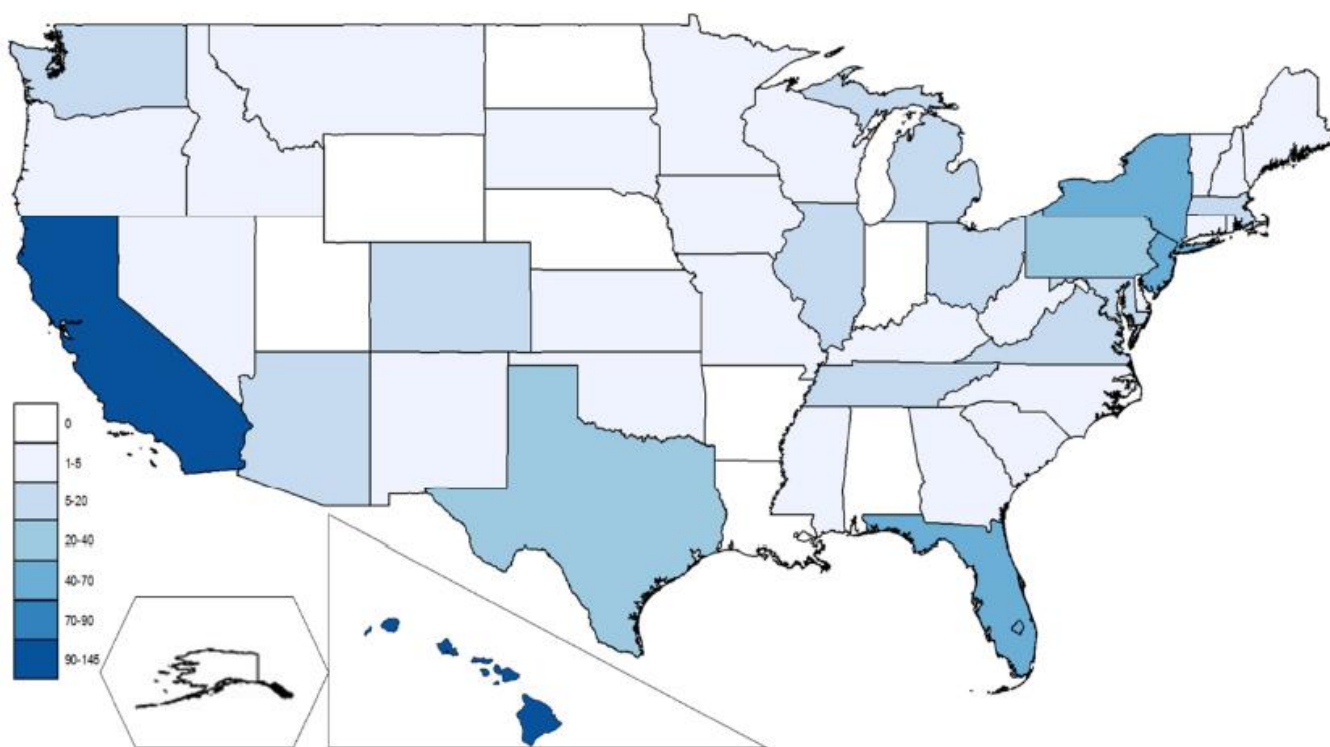
Dengue is a disease caused by any one of four related viruses, which are passed by the bite of an infected *Aedes aegypti* or *Aedes albopictus* mosquito. Infection with one of the four viruses does not protect against the others and consecutive infections put people at greater risk of developing dengue hemorrhagic fever (DHF).

Dengue is not found in Iowa. Cases are in travelers and immigrants returning from parts of the world where dengue transmission occurs. Three cases of Dengue fever have been reported in Iowa, thus far in 2015. In 2014, four cases of Dengue fever were reported to IDPH.

### National Dengue Activity:

As of December 30<sup>th</sup>, 2015, 42 states and two territories have reported dengue cases to ArboNET for 2015 [Figure 7].

**Figure 7. Laboratory-positive travel associated and locally-acquired dengue cases from the 50 states— United States, 2015 (as of December 30, 2015)**



## **Malaria**

Malaria is a serious and sometimes fatal disease caused by a parasite that commonly infects *Anopheles* mosquitoes. Malaria is spread to humans by the bite of the infected female mosquito. Only *Anopheles* mosquitoes can transmit malaria and they must have been infected through a previous blood meal taken from an infected person.

Sixteen cases of malaria have been reported in Iowa. Cases are in travelers and immigrants returning from parts of the world where malaria transmission occurs. In 2014, 17 cases of Malaria were reported to IDPH.

## **Rocky Mountain spotted fever (RMSF)**

American dog ticks are carriers of *Rickettsia rickettsii*, the bacteria that causes RMSF. The American dog tick is the most common species of tick in Iowa and can be found in every county in the state. The tick is most active late March through August.

Eight cases of RMSF have been reported in Iowa. In 2014, 10 cases of RMSF were reported to IDPH.

## **Ehrlichiosis/Anaplasmosis**

There are at least three species of bacteria responsible for ehrlichiosis/anaplasmosis in the United States: *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, and *Anaplasma phagocytophilum*. Ehrlichiae are transmitted by the bite of an infected lone star tick (*Amblyomma americanum*) which is found in Iowa. *A. phagocytophilum* is transmitted by the bite of an infected blacklegged tick (or deer tick, *Ixodes scapularis*) in Iowa. The clinical signs and symptoms of these infections are similar.

Ten cases of ehrlichiosis/anaplasmosis have been reported in Iowa. In 2014, 17 cases of ehrlichiosis/anaplasmosis were reported to IDPH.

## **Lyme**

Lyme disease is caused by *Borrelia burgdorferi* and in Iowa is transmitted to humans by the bite of an infected tick, the blacklegged tick (or deer tick, *Ixodes scapularis*). Ticks are most likely to spread the Lyme disease bacterium during their pre-adult stage (nymph). They are most common between May and July and found in tall grasses and brush of wooded areas.

As of January 13<sup>th</sup>, 285 confirmed and probable cases of Lyme have been reported in Iowa. In 2014, 193 cases of Lyme disease were reported to IDPH.